

1-25-08 (07-YRC-BDcombo)

Southern Illinois University

Burndown Combinations for Glyphosate-Resistant Marestail in No-Till Soybean.

Project Code: 07-YRC-BDcombo Location: Murphysboro, IL
Investigator: Bryan Young

Investigator: Bryan Young, Associate Professor, Southern Illinois University

City State Zip Country: Murphysboro IL 62966 USA
Trial Status: Final **Updated:** 1-24-08

Objective:

Determine if any interaction exists for applications of glyphosate plus 2,4-D for control of glyphosate-resistant marestail.

Weed Code	Common Name	Scientific Name
1. ERICA	horseweed	Conyza canadensis (L.) Crong.

Crop 1:	GLXMA soybean	Variety:	FS4646 RR
Planting Method:	Seeded	Planting Date:	6-2-07
Rate:	180000 S/A	Depth:	1.25 IN
Row Spacing:	30 IN		

Plot Width, Unit: 10 FT	Plot Length, Unit: 30 FT	Reps: 3
Tillage Type: No-Till	Study Design: Randomized complete block	
Previous Crop, Year: ZEAMX, 2006		
Field Prep./Maintenance: N 0 LB/A, P205 0 LB/A, K20 0 LB/A		

Soil Name: Alvin	% OM: 1.6	pH: 5.2	CEC: 6.7
Texture: Very fine sandy loam	Fert. Level: P1: 56 LB/A, K: 143 LB/A		

APPLICATION DESCRIPTION

A

Application Date:	5-23-07
Time of Day:	7:00
Application Method:	Spray
Application Timing:	2-18"MT
Applic. Placement:	BROFOL
Air Temp., Unit:	74 F
% Relative Humidity:	40
Wind Velocity, Unit:	0-2 MPH
Dew Presence (Y/N):	Y
Soil Temp., Unit:	67 F
Soil Moisture:	ABONOR
% Cloud Cover:	30

CROP STAGE AT EACH APPLICATION

A

Crop 1 Code, Stage:	GLXMA NA
Height, Unit:	NA NA

WEED STAGE AT EACH APPLICATION

A

Weed 1 Code:	ERICA
Stage(leaves):	6-40
Height(inches):	2-20
Density:	High

APPLICATION EQUIPMENT

A

Appl. Equipment:	CO2 sprayer
Operating Pressure:	40 PSI
Nozzle Type:	Flat fan
Nozzle Size:	XR 8002
Boom Length, Unit:	7.5 FT
Spray Volume, Unit:	15 GPA

NOTES:

Burndown Combinations for Glyphosate-Resistant Marestalk in No-Till Soybean.

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Weed Code										ERICA<6	ERIC6-12	ERICA>12	ERICA_OA
Crop Code													
Rating Data Type													
Rating Unit													
Rating Date													
Trt-Eval Interval													

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code									
1	NONTREATED											2 d	0 e	0 f	0 h	0 h		
2	ROUNDUP W-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	2-18"MT	A	14.0	ab	53.0	abc	25 c	57 d	38 e	23 fg	
2	AMS	100	DRY	2.0	% w/w	17	lb/100 gal	2-18"MT	A								40 f	
3	ROUNDUP W-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	2-18"MT	A	14.0	ab	53.1	abc	37 ab	88 b	72 b	48 b	
3	2,4-D LV4	3.8	EC	0.475	lb ae/a	1	pt/a	2-18"MT	A								68 bc	
3	AMS	100	DRY	2.0	% w/w	17	lb/100 gal	2-18"MT	A									
4	ROUNDUP W-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	2-18"MT	A	13.5	b	52.3	c	40 ab	88 b	70 b	47 b	
4	2,4-D LV4	3.8	EC	0.95	lb ae/a	2	pt/a	2-18"MT	A								71 b	
4	AMS	100	DRY	2.0	% w/w	17	lb/100 gal	2-18"MT	A									
5	ROUNDUP W-MAX	4.5	SL	1.12	lb ae/a	32	fl oz/a	2-18"MT	A	14.1	ab	52.8	abc	34 abc	68 c	47 d	30 ef	
5	AMS	100	DRY	2.0	% w/w	17	lb/100 gal	2-18"MT	A								43 f	
6	ROUNDUP W-MAX	4.5	SL	1.12	lb ae/a	32	fl oz/a	2-18"MT	A	13.9	ab	53.0	abc	35 ab	88 b	70 b	43 bc	
6	2,4-D LV4	3.8	EC	0.475	lb ae/a	1	pt/a	2-18"MT	A								64 cd	
6	AMS	100	DRY	2.0	% w/w	17	lb/100 gal	2-18"MT	A									
7	ROUNDUP W-MAX	4.5	SL	1.12	lb ae/a	32	fl oz/a	2-18"MT	A	13.5	b	52.5	bc	43 a	90 ab	73 b	45 bc	
7	2,4-D LV4	3.8	EC	0.95	lb ae/a	2	pt/a	2-18"MT	A								67 bcd	
7	AMS	100	DRY	2.0	% w/w	17	lb/100 gal	2-18"MT	A									
8	ROUNDUP W-MAX	4.5	SL	1.55	lb ae/a	44	fl oz/a	2-18"MT	A	13.9	ab	53.1	abc	32 bc	72 c	55 c	38 cd	
8	AMS	100	DRY	2.0	% w/w	17	lb/100 gal	2-18"MT	A								50 e	
9	ROUNDUP W-MAX	4.5	SL	1.55	lb ae/a	44	fl oz/a	2-18"MT	A	13.9	ab	53.2	abc	35 ab	88 b	68 b	42 bc	
9	2,4-D LV4	3.8	EC	0.475	lb ae/a	1	pt/a	2-18"MT	A								63 d	
9	AMS	100	DRY	2.0	% w/w	17	lb/100 gal	2-18"MT	A									
10	ROUNDUP W-MAX	4.5	SL	1.55	lb ae/a	44	fl oz/a	2-18"MT	A	13.5	b	52.5	bc	37 ab	87 b	70 b	43 bc	
10	2,4-D LV4	3.8	EC	0.95	lb ae/a	2	pt/a	2-18"MT	A								64 cd	
10	AMS	100	DRY	2.0	% w/w	17	lb/100 gal	2-18"MT	A									
11	GRAMOXONE INTEON	2	SL	0.75	lb ai/a	3	pt/a	2-18"MT	A	13.7	ab	52.7	abc	38 ab	99 a	98 a	96 a	
11	ACTIVATOR 90	100	LIQ	0.125	% v/v	0.125	% v/v	2-18"MT	A								97 a	
12	ROUNDUP W-MAX	4.5	SL	1.12	lb ae/a	32	fl oz/a	2-18"MT	A	14.2	a	53.8	a	35 ab	83 b	53 cd	33 de	
12	SONIC	70	WG	0.131	lb ai/a	3	oz/a	2-18"MT	A								50 e	
12	AMS	100	DRY	2.0	% w/w	17	lb/100 gal	2-18"MT	A									
13	ROUNDUP W-MAX	4.5	SL	1.12	lb ae/a	32	fl oz/a	2-18"MT	A	14.0	ab	53.4	abc	37 ab	67 c	33 e	22 g	
13	CANOPY	75	WG	0.14	lb ai/a	3	oz/a	2-18"MT	A								32 g	
13	AMS	100	DRY	2.0	% w/w	17	lb/100 gal	2-18"MT	A									
14	ROUNDUP W-MAX	4.5	SL	1.12	lb ae/a	32	fl oz/a	2-18"MT	A	14.0	ab	53.6	ab	33 abc	82 b	68 b	38 cd	
14	VALOR XLT	40.3	WG			3	oz/a	2-18"MT	A								67 bcd	
14	->VALOR SX	51	WG	0.056	lb ai/a			2-18"MT	A									
14	->CLASSIC	25	WG	0.0194	lb ai/a			2-18"MT	A									
14	AMS	100	DRY	2.0	% w/w	17	lb/100 gal	2-18"MT	A									
15	LIBERTY	1.67	EC	0.417	lb ai/a	32	fl oz/a	2-18"MT	A	13.7	ab	53.0	abc	41 ab	99 a	98 a	97 a	
15	AMS	100	DRY	2.0	% w/w	17	lb/100 gal	2-18"MT	A								98 a	
LSD (P=.05)										0.60	1.17	10.0	9.0	6.9	7.2	5.5		
Replicate F										3.217	1.365	0.637	1.163	0.118	1.553	0.958		
Replicate Prob(F)										0.0565	0.2731	0.5366	0.3270	0.8892	0.2293	0.3958		
Treatment F										1.218	1.048	8.011	61.495	108.506	101.016	165.258		
Treatment Prob(F)										0.3218	0.4401	0.0001	0.0001	0.0001	0.0001	0.0001		

Means followed by same letter do not significantly differ (P=.05, LSD)

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Weed Code	ERICa<6	ERIC6-12	ERICa>12	ERICa_OA	ERICa_OA	ERICa
Crop Code						
Rating Data Type	Control	Control	Control	Control	Control	Plants
Rating Unit	Percent	Percent	Percent	Percent	Percent	1.0 m2
Rating Date	6-20-07	6-20-07	6-20-07	6-20-07	10-9-07	10-9-07
Trt-Eval Interval	28 DA-A	28 DA-A	28 DA-A	28 DA-A	EOS	EOS

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code						
1	NONTREATED									0 f	0 f	0 g	0 f	0 e	15.0 a
2	ROUNDUP W-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	2-18"MT	A	53 e	45 e	33 f	42 e	62 d	7.3 b
2	AMS	100	DRY	2.0	% w/w	17	lb/100 gal	2-18"MT	A						
3	ROUNDUP W-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	2-18"MT	A	92 ab	80 bcd	70 bc	79 b	97 a	0.7 de
3	2,4-D LV4	3.8	EC	0.475	lb ae/a	1	pt/a	2-18"MT	A						
3	AMS	100	DRY	2.0	% w/w	17	lb/100 gal	2-18"MT	A						
4	ROUNDUP W-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	2-18"MT	A	91 ab	78 cd	63 cd	76 bc	96 a	3.0 cde
4	2,4-D LV4	3.8	EC	0.95	lb ae/a	2	pt/a	2-18"MT	A						
4	AMS	100	DRY	2.0	% w/w	17	lb/100 gal	2-18"MT	A						
5	ROUNDUP W-MAX	4.5	SL	1.12	lb ae/a	32	fl oz/a	2-18"MT	A	72 cd	50 e	42 ef	49 de	78 bcd	4.0 bcd
5	AMS	100	DRY	2.0	% w/w	17	lb/100 gal	2-18"MT	A						
6	ROUNDUP W-MAX	4.5	SL	1.12	lb ae/a	32	fl oz/a	2-18"MT	A	92 ab	75 d	58 cde	71 bc	93 abc	2.3 cde
6	2,4-D LV4	3.8	EC	0.475	lb ae/a	1	pt/a	2-18"MT	A						
6	AMS	100	DRY	2.0	% w/w	17	lb/100 gal	2-18"MT	A						
7	ROUNDUP W-MAX	4.5	SL	1.12	lb ae/a	32	fl oz/a	2-18"MT	A	97 a	93 ab	83 ab	90 a	99 a	0.0 e
7	2,4-D LV4	3.8	EC	0.95	lb ae/a	2	pt/a	2-18"MT	A						
7	AMS	100	DRY	2.0	% w/w	17	lb/100 gal	2-18"MT	A						
8	ROUNDUP W-MAX	4.5	SL	1.55	lb ae/a	44	fl oz/a	2-18"MT	A	68 d	53 e	47 def	53 d	70 d	6.0 bc
8	AMS	100	DRY	2.0	% w/w	17	lb/100 gal	2-18"MT	A						
9	ROUNDUP W-MAX	4.5	SL	1.55	lb ae/a	44	fl oz/a	2-18"MT	A	92 ab	78 cd	70 bc	79 b	90 abc	5.0 bc
9	2,4-D LV4	3.8	EC	0.475	lb ae/a	1	pt/a	2-18"MT	A						
9	AMS	100	DRY	2.0	% w/w	17	lb/100 gal	2-18"MT	A						
10	ROUNDUP W-MAX	4.5	SL	1.55	lb ae/a	44	fl oz/a	2-18"MT	A	95 a	89 abc	83 ab	90 a	97 a	1.0 de
10	2,4-D LV4	3.8	EC	0.95	lb ae/a	2	pt/a	2-18"MT	A						
10	AMS	100	DRY	2.0	% w/w	17	lb/100 gal	2-18"MT	A						
11	GRAMOXONE INTEON	2	SL	0.75	lb ai/a	3	pt/a	2-18"MT	A	98 a	96 a	94 a	96 a	96 a	0.3 de
11	ACTIVATOR 90	100	LIQ	0.125	% v/v	0.125	% v/v	2-18"MT	A						
12	ROUNDUP W-MAX	4.5	SL	1.12	lb ae/a	32	fl oz/a	2-18"MT	A	80 bcd	70 d	57 cde	67 c	95 ab	4.0 bcd
12	SONIC	70	WG	0.131	lb ai/a	3	oz/a	2-18"MT	A						
12	AMS	100	DRY	2.0	% w/w	17	lb/100 gal	2-18"MT	A						
13	ROUNDUP W-MAX	4.5	SL	1.12	lb ae/a	32	fl oz/a	2-18"MT	A	68 d	48 e	37 f	45 de	88 abc	3.0 cde
13	CANOPY	75	WG	0.14	lb ai/a	3	oz/a	2-18"MT	A						
13	AMS	100	DRY	2.0	% w/w	17	lb/100 gal	2-18"MT	A						
14	ROUNDUP W-MAX	4.5	SL	1.12	lb ae/a	32	fl oz/a	2-18"MT	A	85 abc	68 d	55 cde	68 bc	77 cd	5.7 bc
14	VALOR XLT	40.3	WG			3	oz/a	2-18"MT	A						
14	->VALOR SX	51	WG	0.056	lb ai/a			2-18"MT	A						
14	->CLASSIC	25	WG	0.0194	lb ai/a			2-18"MT	A						
14	AMS	100	DRY	2.0	% w/w	17	lb/100 gal	2-18"MT	A						
15	LIBERTY	1.67	EC	0.417	lb ai/a	32	fl oz/a	2-18"MT	A	99 a	98 a	96 a	97 a	93 abc	0.7 de
15	AMS	100	DRY	2.0	% w/w	17	lb/100 gal	2-18"MT	A						
LSD (P=.05)										14.3	13.8	16.7	10.9	16.7	3.70
Replicate F										2.573	0.534	0.012	0.231	0.005	6.224
Replicate Prob(F)										0.0942	0.5921	0.9885	0.7952	0.9953	0.0058
Treatment F										26.704	29.025	19.773	46.908	19.216	8.977
Treatment Prob(F)										0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

Means followed by same letter do not significantly differ (P=.05, LSD)

Trial Comments

1. Protocol: SIU / ISA.

2. Ratings: WC 14 + 28 DAT; record control for plants <6", 6-12" and >12";
CI/WC 14 DA POST and EOS.

If needed, prior to treatment, mark 20 random marestalk plants in each plot that represent a uniform distribution of the range

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of the maretail plant sizes.

For each of the 20 plants, record size and stage prior to application, and rate visual control of each plant and the entire plot at 3, 7 + 14 DAT.

3. Maretail density EOS with (2) 0.5 m² quadrats.

4. Blanket (7.5 ft wide), to all plots except the nontreated, of Roundup WeatherMax (22 fl oz/A) at 28 DAP.

5. DA-A = Days after 2-18"MT application. EOS = End of season. 1.0 m² = 1.0 square meter.

ERICA<6, ERICA6-12, ERICA>12, and ERICA_OA are ERICA, less than 6 inch, 6 to 12 inch, greater than 12 inch, and overall, respectively.

ERICA_PL = Marked individual plants (data collected for specific treatments only).

6. Harvested 10-29-07, (2) 30 inch rows by 27 feet.